

32. CRABS SUMMERING IN LAKESIDE HOTEL

Leonard Woolf in THE JOURNEY NOT THE ARRIVAL MATTERS his autobiography of the years 1939 to 1969, relates an observation which may interest readers of the *Journal*.

During a visit to Israel he and a companion arrived at a hotel on the shore of the Sea of Galilee two days before the hotel was due to close for the hot weather. Owing to a shooting incident in which the Syrians killed or injured an Israeli fisherman the hotel remained open for one day beyond the usual date, and Leonard Woolf, his companion, and three United Nations Commissioners investigating the occurrence were the only guests in the hotel on

the last day. I proceed in the words of the author:

"We were sitting in the vast lounge hall after dinner when we saw suddenly a long procession of large and small crabs file past us and begin climbing up the staircase. When the hotel manager passed by us paying no attention to the long line of crabs, I asked him what it meant. He said that whenever the hotel closed down, it was immediately invaded by hundreds of crabs from the lake and they remained there, upstairs and downstairs, until the hotel reopened with the cool season."

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33. DESCRIPTION OF ISOPOD *CIROLANA PARVA* HANSEN PARASITIC ON THE EYE BALLS OF DOLPHIN, *DELPHINUS DELPHIS* LINNAEUS WITH A KEY TO THE INDIAN SPECIES OF THE GENUS *CIROLANA* LEACH

(With eleven text-figures)

INTRODUCTION

Stebbing (1905) recorded *Cirolana parva* from Ceylon waters and Chilton (1924) reported it from Chilka lake, India. As there is no illustration to assist identification of *C. parva* in the earlier accounts of Stebbing (1905) and Chilton (1924) we have described the species with full illustrations in this paper. Seventeen specimens of *Cirolana parva* Hansen have been collected from the eye balls of the dolphin *Delphinus delphis* Linnaeus caught from Palk Bay, Mandapam on 30-xi-1971. The species of the genus *Cirolana* so far re-

corded from Indian region are *Cirolana willeyi*, *C. bovina*, *C. parva*, *C. venusticauda*, *C. sulcatICAUDA*, *C. pleonastica*, *C. fluvIatilis*. *C. pustulosa* and *C. sulcata*. A synoptic key to the identification of these species is also given.

Distinguished by the presence of five free pleonal segments with a pleotelson. Endopods of pleopods 1 to 4 fringed with setae. Eyes absent or present. Peduncle of the second antennae five jointed. Molar process blade like with fine sharp and closely arranged teeth. Mandibles with lacinia mobilis; peraeopods ambulatory. Telson broad, sub-triangular; setae on the margin of the pleotelson and

uropod are elongated with fine bristles. Maxillipeds with hooks on second segment.

***Cirolana parva* Hansen (Figs. 1-11)**

- 1890, *Cirolana parva* Hansen, *Vid. Selsk. Skr., Ser. 6*, 3, pp. 321, 340, pl. 2, fig. 6-6b, pl. 3, fig. 1-1d.
 1902, *Cirolana parva* Moore, *Bull. U. S. Fish. Com.*, 20, pt. 2, pp. 166-167, pl. 8, figs. 6-8.
 1905, *Cirolana parva* Hansen, Stebbing, *Ceylon Pearl Oyst. Fish. Rep.*, part IV, No. 23, p. 12.
 1924, *Cirolana parva* Hansen, Chilton, *Mem. Indian Mus.*, 5(12), pp. 883-884.

Body smooth, telson broad, sub-triangular in shape., apical margin of telson rounded with 6 thick short setules of which three on the right side and three on the left side of the telsonic segment, close to the apical margin. The terminal segment also bears numerous fine setae along the margin, the outer ramus of the uropod is shorter and narrower than the inner which is very much broader, uropod margins furnished with fine setae and a few setules.

The third joint of the first antenna is longer than the first and second joints, the flagellum is longer than the peduncle and fifteen-jointed. Hansen (1890) described the flagellum as eleven-jointed, much shorter than the peduncle, Moore (1902) as eleven-to twelve-jointed and Stebbing (1905) as nine-jointed, little shorter than the peduncle. The second antenna about more than thrice as long as the first, last joint of the peduncle longer than the preceding, flagellum much longer than the peduncle about fortyone-jointed. Stebbing (1905) has described that the second antennae have the first three joints of the peduncle very short, fourth joint a little shorter than the fifth and flagellum 22-26 jointed. The second antennae closely resembled Stebbing's description except in the flagellum being more jointed. The joints of the flagellum of the antennae

were more numerous in the specimens described by Chilton (1924). The antepenultimate joint of the maxilliped possess three elongated setae on the outer margin. The maxilliped joints setose along their margin. The third palp of the outer margin of the maxilliped furnished with sixteen elongated setae and the setae are ornamented with fine bristles.

Maxilla I and II: First maxilla composed of two lobes—a sensory endopod and a biting exopod., there are long setae present on the two lobes. The second maxilla also possess long setae which serves as food strainers.

Mandibles: Mandibles are strong and serve as biting structures., the incisor process or the cutting part is thickly chitinised., the mandibles have a sensory palp of three articles—lacinia mobilis, molar teeth and mandibular palp. The mandibular palp is curved at the apex and the molar teeth is blade—like which is characteristic of the genus *Cirolana*.

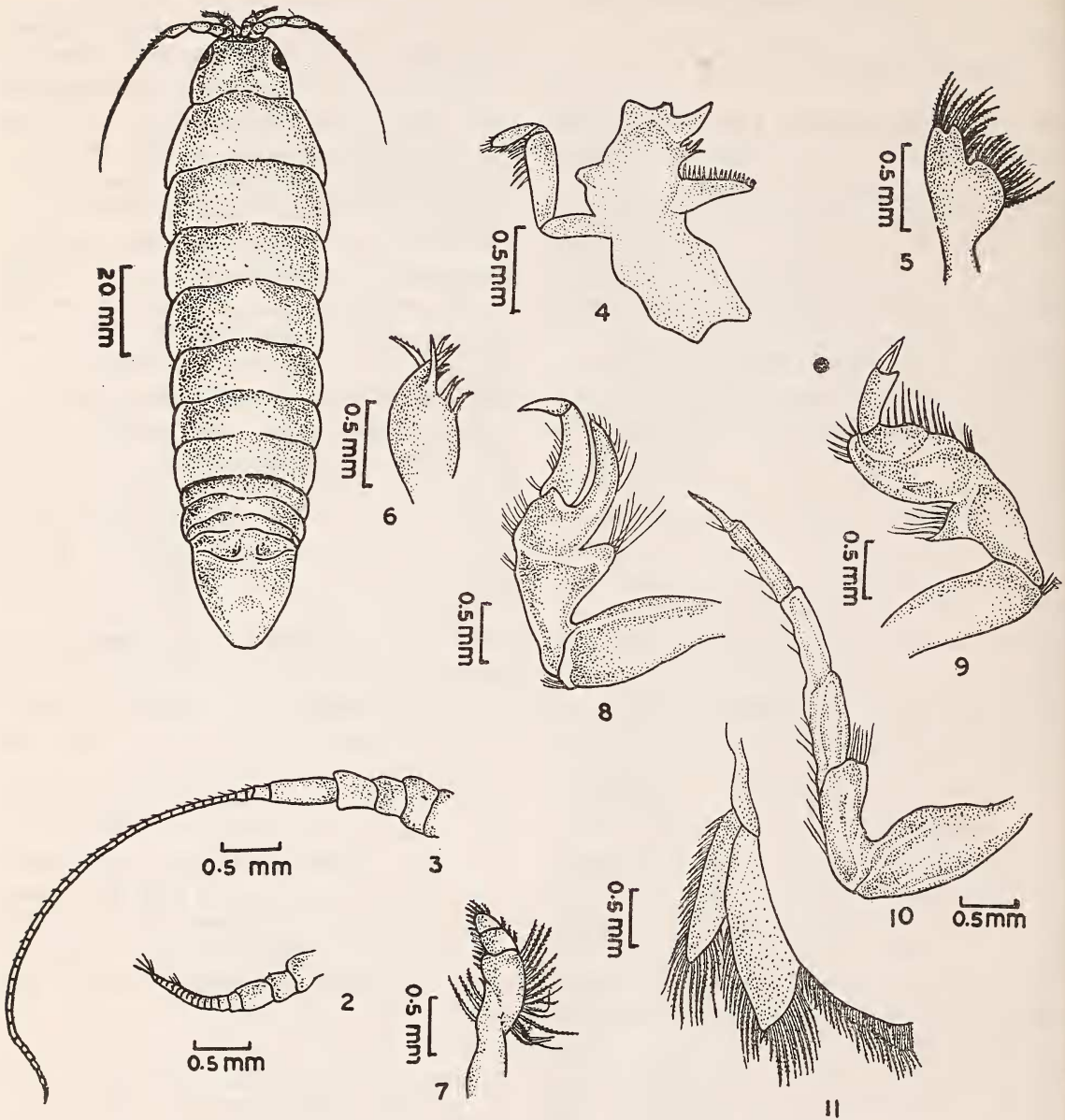
Size: The length and breadth of males ranged between 8.0 and 17.0 mm and 1.0 and 4.2 mm respectively. The length of females ranged between 8.5 and 17.0 mm and the breadth between 1.5 and 3.0 mm.

General Distribution: Gulf of Mexico, West Indies, Tale Sap, Sri Lanka and Chilka Lake.

Remarks: *Cirolana parva* has been reported for the first time from the Palk Bay region. Though Stebbing (1905) and Chilton (1924) have described *C. parva*, this report gives detailed description and illustration of the species.

KEY TO THE INDIAN SPECIES OF THE ISOPOD GENUS *Cirolana* LEACH 1818.

1. Frontal lamina pentagonal or hexagonal in shape, margin of cephalon medially produced., posterior margin of the peraeon segments and the pleon armed with spines., dorsal surface of telson without spines. *C. willeyi*



Figs. 1-11. *Cirolana parva* Hansen. 1. Dorsal view of the entire specimen; 2. First antenna; 3. Second antenna; 4. Mandible; 5. Maxilla I; 6. Maxilla II; 7. Maxilliped; 8. Peraeopod I; 9. Peraeopod II; 10. Peraeopod VII; 11. Telson and Uropod.

2. Frontal lamina is differently shaped in adult males., posterior peraeon segments not with distinct spines but with crenulate margin., pleon segments armed with spines, telson conical with a pair of large submedian spines. *C. bovina*
3. Frontal margin of cephalon slightly produced., peraeon segment VII as broad as other peraeon segments., eyes small not on border of cephalon., endopod of uropod reaching beyond the posterior margin of pleotelson. *C. parva*
4. Frontal lamina quadrangular in shape., margin of cephalon medially produced.
.. .. *C. venusticauda*
5. Margin of cephalon slightly produced., transverse rows of spines along the posterior margin of the peraeon segments., telson with double row of tubercles or spines. .. *C. sulcata*
6. Frontal margin of cephalon smooth, angular., frontal lamina narrow pentagonal, very broad at base., posterior margin of the posterior peraeon segments with one to three transverse rows of spines., pleon tuberculate., telson with a series of pairs of tubercles. *C. pleonastica*
7. Frontal margin of cephalon rounded., posterior peraeon segments and the pleon armed with spines., dorsal surface of the telson with two submedian spines followed by two parallel rows of three to four small spines. *C. fluviatilis*
8. Frontal margin of cephalon rounded., posterior margin of the peraeon segments with a single row of spines., telson with double row of elongated tubercles. *C. pustulosa*
9. Frontal lamina widening to middle., one to three transverse rows of spines along the posterior margin of the peraeon segments., pleon not tuberculate., telson grooved with a series of pairs of tubercles or spines .. *C. sulcata*

ACKNOWLEDGEMENTS

We are grateful to Dr. E. G. Silas, Director, Central Marine Fisheries Research Institute for his keen interest and encouragement. Thanks are also due to Mr. M. Kumaran for the material.

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34. SHELL CHARACTERISTICS OF THE SPAT OF THE TWO SPECIES OF OYSTERS, *CRASSOSTREA MADRASENSIS* (PRESTON) AND *C. CUCULLATA* (BORN)

(With two text-figures)

Although a good deal of information is available on the biology of a few Indian oysters (Rao 1974), our knowledge on the morphology, settlement and growth of spat of many species is still insufficient. Settlement and growth of spat of two species are well known: *Crassostrea madrasensis* (Preston) (Hornell 1910; Paul 1942, Rao & Nayar 1956) and *C. gryphoides* Schlotheim (Durve & Bal 1962).

An important aspect of oyster farming is the collection of the spat of the required species on the spat collectors and the removal of alien spat periodically to avoid competition for space and food. The knowledge of the shell characteristics of the spat of oysters will be useful in studying the early life histories and in maintaining spat collectors free from alien spat.